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AN

E S S A Y

ON THE

Y E L L O W F E V E R

OF

W E S T E R N I N D I A.

BY DANIEL THOMAS, M. D.

D U B L I N :

PRINTED BY W. PORTER, 69, GRAFTON-STREET.

1797.

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1818 10

REVIEW

AND HISTORY

OF THE DISEASES OF WOMEN

1818 10



P R E F A C E.

WHEN we reflect on the constant intercourse which, for nearly three centuries, has invariably subsisted between the several parts of Europe, and the Tropical regions, an intercourse, founded on the prevailing rage for conquest, and for commerce, encouraged by the restless dispositions of the numerous inhabitants in the former quarter of the globe, and supported by the progressively enormous increase of their luxury, which teaches them to consider the most expensive superfluities, as the mere necessaries of life, thereby exposing them perpetually to the most malignant diseases, and such as were formerly unheard of; when we consider, that this communication has obliged them to pay, with the lives of many millions, the high price of these noxious redundancies, we may fairly conclude, that the philanthropist could not offer a more invaluable present to the temperate ~~sects~~,

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than a treatise on the disorders which prevail in the torrid ^{zone}. But when every news-paper announces the fearful desolation, which the Yellow Fever has spread through our navy, and army, in the Western World, every subject of Great Britain, in lamenting such havock, by far more terrible than the ravages of war, must be impressed with the desire of preventing it, if possible: every principle, whether selfish or social, conspiring to promote this laudable inclination; and as the author of this Essay has had an opportunity of observing this formidable complaint, not only in these climates, where the powerful influence of a vertical sun gives expansion to contagion, and, by relaxing the system, renders its force of resistance, unhappily inadequate to the grand purpose of preservation from it, but of making his remarks, also, on its less injurious attacks in more northern latitudes, he deems it his duty, to communicate to the public, the result of his reading, and experience, on this subject. The work being chiefly designed to convey information to young men, intrusted with the care of both our navy, and our army, ^{but} not in any degree calculated to engage the attention of crudite physicians, who will probably despise it for the total want of medical parade, he has, so far as it was practicable, carefully avoided nosological definitions, as they are, or descriptions, as they should be called; he has also abstained

from

from the unnecessary use of technical terms, preferring, on all occasions, brevity, simplicity, and perspicuity, to the appearance of profound thought, and of extensive information. With this view, he has neglected the citation of his authorities, as the opposite mode of proceeding would tend to swell the work to an unmeasurable size, and thereby, to defeat the principal design of it; but, though obliged, by necessity, to adopt this resolution, he has humbly attempted to follow the example, afforded in the historic writings of Voltaire, who, though he does not quote from any person, is both deeply informed, and strictly veridical. If, notwithstanding these reasons, the Faculty should persist in contemning the simplicity of this little treatise, the Author can plead merely this in his excuse, that μεγαλ. έλιον, μεγαλανον, or a great book is a great evil, and to this he must add, that though he has abridged the accounts, he has given the entire substance of each work, and can produce in confirmation of it, citations from the very best writers on the subject; that when he is obliged to deviate from their method, he can advance, in his favour, striking arguments from analogy, supported by several facts; and if any man will assert, that these, united, are not a sufficient ground for innovation, he must, from that moment, put a stop to every species of improvement. The intention of the Author was

to offer an intelligible system to the ignorant, and he would consider it as a very great favour, if men of candour, and information, would deign to offer their objections to his theory, or practice.

INTRODUCTORY ESSAY.

ON
CONTAGION,

AND THE

MODE OF PHILOSOPHISING.

INFECTIOUS diseases are divided into three classes, of which the first is, when the source of the contagion exists among the people: thus the fosse, which surrounds the wretched city of Grand Cairo, in Egypt, and into which all the filth of the town is conveyed, annually teems with destruction to the inhabitants; for when the strong action of a broiling sun, and that too in a country, where no rains refresh the earth, or clouds obstruct his vehemence,

mence, has totally absorbed the waters of the Nile in it, and excited the putrefactive process in the various substances, which they contained, then do the impure exhalations, arising from the noxious changes in the several corrupting bodies, generate that fatal fever which, from its baneful effects, we have denominated the Plague, and to a malady so propagated, we give the appellation of an endemic disorder. The second is, when the contagion has been imported from other countries, and has shed its destructive influence on the people whom it has visited, in which case it is denominated an epidemic complaint. The last is, when the ailment, whether a native of the country, or imported, is observed to attack a small number of the inhabitants, and to this we give the name of a sporadic disease. In whatever degree you find any species of contagion inimical to human nature, in the same will you observe it less capable of being diffused through the atmosphere; and in whatever proportion it appears less noxious to the life of man, in the same shall we perceive it ever ready to blend with the fluid which we respire, for instance, a man may with safety approach his head to the Grotto dei Cani in Italy, but if he should immerge it ever so little beneath the surface, he certainly incurs immediate destruction; on the contrary, we may observe several kinds of sporadic contagions to be diffused through the atmosphere, their effects on the human economy being at the same time comparatively innocuous. The most fatal kinds of infection are then the most weighty, infomuch

insomuch that we find them to be, without the aid of art, perfectly incapable of blending with the air ; but as the destructive tendency of contagion increases, we may observe the sphere of its action to be contracted, or, in other words, it becomes more concentrated ; opposed to this are those of a sporadic kind, which are ever found innocuous in proportion to their capability of diffusion through the atmosphere, some of them being so weak that though they possess sufficient force for the communication of disease, they are never observed to deprive persons of life. Between these two extremes there are several intermediate degrees of contagion, which, in proportion to their concentration, are rendered more lethiferous, and in proportion to their diffusion, become less destructive ; but here I must remark, that those of an epidemic kind, by being suffered to remain in certain substances *, disposed to retain them, as it were in a fomes, may acquire an energy, which renders them equally pernicious with the first mentioned. Thus we read that the bales of goods, which conveyed the plague from the Levant, to the city of Marseilles, acted with such deadly force on the persons, who opened them, that they were instantly deprived of life, as by an electrical shock, and perhaps, by the same means, might the most innocent kind be rendered highly dangerous ; but though so deadly were its first attacks, yet do we find some boundaries, affixed by nature to the ravages of this dif-

* Such as cotton, camels hair, silk, &c.

order, and may observe, that in proportion to its diffusion did its violence decline, as the ocean, by its vast expansion, diminishes its own fury ; nay, we perceive it insensibly to assume a much milder aspect, and to die away progressively with the numberless victims, which were sacrificed to its rage. Scarcely can any thing more forcibly impress us than the facts now related, with an idea of the infinite wisdom, displayed by the Author of Nature, in the preservation of his creatures, for while, by the dangerous tendency of certain diseases, he continually excites the activity of the human mind, and perpetually prompts it to seek for efficacious remedies, he has, by the establishment of two laws, prevented the evil consequences of their ignorance, or inattention, the first, securing them from certain destruction, by rendering the most fatal species of contagion, in the natural course of things, immiscible with the atmosphere, while the second inhibits those of a less noxious, though highly deleterious kind, to be easily blended with the fluid which we respire ; but if we should wish to add greater force to this glorious conception, it must be effected, by adding to the means of protection from contagion, those, which are established for rendering it innocuous, and which it becomes necessary, at present, to point out. The expanding influence of an intensely hot sun *, is the most energetic principle in all nature : every element

* For greater clearness I have here substituted the visible cause of heat for the principle of inflammability.

seems to derive activity from it, this gives elasticity to air, fluidity to water, generative powers even to the most inert matter, and to this we are indebted for all the most beautiful productions of the earth ; but, though the general operation of it is so highly beneficent, it also communicates new powers to certain things, which are observed to be inimical to the human species, sublimating contagion, rendering it capable of diffusion through the ambient air, and thereby extending the confined sphere of its agency. Now good, and bad, consequences being equally produced, the efficiency of this principle may here seem equivocal, for if by diffusion, it renders contagion less deadly, still it enlarges the narrow limits of its activity ; but every other element, with all that beauteous offspring, which have been generated by their united energy, conspires to render every species of contagion less noxious. Now here I might adduce a variety of experiments to prove, that any infection whatsoever, if once perfectly dispersed through a very large quantity of the fluid, which surrounds us, may even be breathed without fear of communicating deleterious effects. Water also will be found a powerful corrector of contagion. I shall not tire the reader, by torturing this long-supposed elementary principle, in order to determine by contradictory experiments, (as some great chymists have lately done) whether it is composed of phlogisticated, or dephlogisticated air, or of both, lest, like a criminal, extended on the rack, it should equally confess both falsehoods, and truths, but confining

myself within the limits of more ancient conceptions, shall consider it, as an universal purifier in nature. Now, if experiments speak loudly in favour of the advantages, derived from the mixture * of contagion with the fluid, which we respire, those instituted with respect to water promise to mankind more salutiferous effects : we find this element, at all times, adapted to attract pestilential vapours, and to annihilate their virulence ; it continually absorbs them, thereby depriving them of all their destructive qualities, and runs perpetually for the purpose of catching them. Every tree, every shrub, every flower, and every vegetable, possessing pores, which are endowed with the powers of inhalation, and exhalation, draw in contagious air, and either render it fixed in their own bodies, or respire it quite purified ; but while so many powerful agents in nature conspire in promoting this beneficent design, man alone appears perfectly inattentive to their operations, through the indolence of his disposition, the dominion of his passions, and the despotism of his prejudices, neglecting to avail himself of the various means, with which the Deity has furnished him for the important business of self-conservation. Could men be once induced to engage in the work of philosophical research, with that dispassionate love of truth, and that steady application, which the utility, and dignity, of the subject require, we might soon hope

* N. B. I use the term mixture in the vulgar acceptation, and not in a chymical sense, as denoting an elective attraction.

to see medicine, equally advanced with every other branch of natural knowledge; but when so few persons ever reason, and so small a part of those who attempt to exert their intellect, are ever found judiciously to prosecute the design, it is by no means wonderful, that so little lights have hitherto been thrown on this most valuable art.

We have already observed, that the most deadly kinds of contagion were most ponderous, and naturally immiscible with the atmosphere; that such species of it as communicate pestilential disorders, are less ponderous, and more miscible; while those of a sporadic nature blend easily with the air; it may therefore seem strange that the second sort can become epidemic in any country, and that any person can escape the attacks of the latter. But here we should recollect, that the one possesses such a powerful energy, as renders it very difficult for any person, who comes within the sphere of its action, by any means, to avoid its dangerous effects, until it is corrected by some powerful antiseptic, or enfeebled by diffusion. To this we may add, that almost every substance in use about the bed of sickness, is capable of retaining the contagion, as in a fomes, and of concentrating its force; but we should also remark, that it is so very ponderous, as renders it incapable of being conveyed by the air, in a body, to any distance, and that when it is broken, and divided in the atmosphere, it is deprived of all its noxious effects.

On the contrary, the sporadic contagions, as those, which convey the small pox, measles, hen, or swine pox, are, from their levity, capable of being conveyed through the air in a body, and to a considerable distance; we cannot therefore wonder, that the former species thereof should act with baneful efficacy, but in a narrow compass, and that the latter should extend its influence to a very large circle, but, at the same time, should attack the human species in small numbers, and not more than once assail the same person, the infection either attaching itself to a certain portion of the fluids, which was found capable of being assimilated to its nature, or being naturally so feeble as to be rendered unable to act twice on the same system. It is absolutely necessary, that the reader should treasure up, in his memory, these observations on the modes, by which contagion is propagated, and repressed, as he will have frequent occasion for the application of them; it will be highly expedient for him also to enlarge his mind, thereby preparing it for useful discoveries; but as this is the greatest exertion of the human soul, requiring a perfect freedom from passion, and from prejudice, it may be proper to point out the means, by which such emancipation may be obtained:

The history of medicine, generally considered, and the accounts, transmitted to us with respect to several diseases in particular, contain as many falsehoods, as perhaps may be found in the records of any nation; ignorance has occasioned some persons to

to mistake fiction for reality ; the arts of designing men have favoured the illusion, and not only duped the weak, but confounded the wise, while the prepossessions of many, supporting particular opinions, have equally obscured the radiance of truth. it is not sufficient that a physician should be a man of veracity, for he must likewise be possessed of veridicity *, and as this requires a philosophical mind, with deep investigation, no person need wonder, that it can so rarely be found. There are two causes which, though in their nature perfectly opposite, equally induce men to deviate from truth ; the first of these is the goodness of their own heart, suggesting to them, that the whole world is as incapable, as themselves of sinister designs, or wilful imposition. This amiable weakness engaged the ingenious Boyle to offer to the world, on the testimony of others, many falsehoods, as facts ; but if this could happen in philosophy, how very probable is it in physic, which is the offspring of chance, ushered into existence in times of the grossest ignorance, and nurtured in superstition, wearing still the marks of its origin, and progress. The second is the delusion of self-love, for if any person has advanced the most palpable absurdities, it can scarcely be believed, with what industry, he will strive to varnish over their defects, and to evade the force of adverse reasoning, or the inductions of

* Veracity denotes the principle—veridicity, the act of telling truth, and each may be frequently found separate from the other.

experience ; but as these causes of deviation from veridicity, though not equally criminal, are equally injurious, it is necessary to impress men with a love of real wisdom, and in this arduous task I am at present to engage.

Since, however, such a Herculean labour is little suited to the feeble powers of an unnoticed individual, let me rouze their attention by offering to them opinions, uttered by the parent of all useful science.

The first of men, Lord Verulam, still more dignified by his talents, than by his exalted station, has pointed out the grand defect in the ancient philosophers *, who, as he observes, were absolute dogmatics, or empirics ; the former, he remarks, resemble the spider, in deducing chimerical theories from their brain, as this animal spins its web from its own bowels, while the latter are like the ant, which employs itself in laying up materials for future use. Both these methods he shews to be insufficient for the advancement of science, as the one set never submit their reveries to the correction of experience, and the other merely treasure up solitary facts without generalization, without order, or arrangement ; he therefore recommends to all persons, who are studious of making a progress in the study of nature, the example of the bee, for as she turns, and digests by her peculiar faculties, the

* See Bacon's *Novum Organum Scientiarum.*

materials, which she extracts from the flowers of the fields, or the garden, so should he deposit those, which he derives from natural history, and mechanical experiments, not unaltered in the memory, but subdued, and changed in the intellect. He insists that by the union of these two faculties alone, can we hope to make any progress in the study of philosophy, and then points out the manner in which natural knowledge can be promoted, viz:—by allowing all our researches to be directed by reason, yet ever submitted to the test of experience. He proceeds to inform us that there are two kinds of experience, the first is such, as men, urged by necessity, are apt to acquire under the direction of chance alone, as the dog, when sick, seeks aid by eating grass, and having found relief by this mean, treasures up the remedy for the future in his memory, whereas the latter is sought for under the guidance of reason, and has thence obtained the appellation of experiment; the one then is common to us with every animal, as possessing sensation, and recollection, the latter is peculiar to us, as endowed with rationality. It must be acknowledged by every man of candour, that in the early periods of human existence, the first hints, which led the observers to useful inventions, were suggested by chance; but if any person would thence infer, that the same does take place in an age of improvement, he must be acknowledged most grossly mistaken. The secrets disclosed by accident, are few, and inconsiderable; nay, we find

find that even such, as appear to have been discovered in this manner, were originally sought for by rational experiment, though the result did not correspond with the primary intention. As the real essence of all bodies is perfectly unknown, and of course reasoning a priori is inadmissible, all useful experiments must be instituted under the sanction of analogy, teaching men to examine whether any two substances display a perfect resemblance to each other, in which case we infer, relying on the indubitable testimony of nature, that they will produce exactly the same effects; but as we seldom meet with perfect analogies, the philosopher will find himself under the constant necessity of generalizing his observations, abstracting whatever was peculiar to every particular object of his attention, and by this mode alone can we hope to make advances in the science of nature, considered generally, or in the art of healing, when it demands our special ~~examination~~^{examination}. It was the neglect of this grand principle, that led Plato into the palpable absurdity of defining,* (as in those ages of ostentatious wisdom, and real ignorance, it was called) man, a two-legged animal without feathers, the folly of which Diogenes very ludicrously exposed, crying out to a large assembly, behold Plato's man, when he exhibited before them, a well plucked cock. But if inattention to generalization has led

* I cannot avoid again remarking, that unless the real essence is known, any attempt on definition is palpably absurd.

men into error, a strict adherence thereto has supplied all our useful knowledge, with respect to material beings, and taught us regularly to expect from a similar cause, a similar effect. This principle is equally applicable to diseases, for observing certain kinds of them to be accompanied with a full, quick, and hard pulse, with very intense heat, and also with local pain, abstracting what was peculiar to each particular malady, we generalize them all, and give to them the appellation of inflammatory ailments ; on the contrary, perceiving others to be characterized by a weak and soft pulse, by great prostration of strength, and by petechiae, or livid spots on the surface of the body, pursuing the same method, we conjoin these, and give to them the denomination of putrid disorders. When we can apply abstraction to diseases, as affections of body, it is clear, that we may use it with respect to the several substances, which we design for the purposes of healing, as the person who observes certain medicines to possess the power of allaying irritation, will be inclined to class these together, without attending to every trifling difference in their mode of operation, uniting them under the generick name of antiphlogistics ; remarking also, that other remedies display a strong tendency to the correction of putrefaction, he will think of reducing these into a common order under the appellation of antisepsics, though perhaps all the properties of no two among them may be perfectly alike. The grand

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fault of physicians * is that they, for the most part, attach themselves to a blind empiricism, totally neglecting this philosophic mode of proceeding, in consequence of which they often found their practice on a solitary fact, in opposition to general principles, although if it had been viewed with a discerning eye, instead of militating against, it would be found to confirm, them ; but, as true inductions can be made most strikingly apparent by contrasting them with false, I shall suppose a man of a very strong constitution, and addicted to athletic exercises, to have been attacked with a putrid fever in the spring, and the symptoms of reaction seeming very strong, shall also allow venesection to have been administered, let me now consider what consequences should, and what may probably be deduced. The philosopher would be inclined to condemn his own conduct, from the moment, that symptoms of putrefgency appeared, and though the patient should recover, he will attribute this event to the firmness of his original stamina, and be very cautious, in future, of committing the same error ; the empiric, on the contrary, ascribing the cure entirely to the bleeding, not to that strength of constitution which enabled the sick person to resist the united efforts of the doctor, and of the disease, perceiving also, that in its progress the malady most evidently

* This term, as denoting a professor of the healing art, is peculiar to the English language, for in others it signifies a natural philosopher, being derived from φυσικός. Our country then considers him as what he should be, not what he generally is.

assumed the putrid form, will lay down as a maxim, that phlebotomy should be used in the commencement of all such complaints. In vain will the tenderness of infancy, the weakness of old age, and the fragility of beauty, plead for a reprieve from the death dealing lancet ; the decree of the despot, as soon as pronounced, must necessarily be executed, and though every day hundreds fall sacrifices to his ignorance, will he, like San Grado, persist in maintaining, that they died merely because they had not lost a sufficiency of blood. But if empiricism may establish a bad remedy in opposition to general principles, it may decry an useful medicine in contradiction to the same. For instance, let us suppose a person of a delicate constitution to be attacked with a putrid fever, and the practitioner to have thrown in large quantities of bark, with abundance of wine, notwithstanding which, the patient expires, and let us now reflect on the consequences, which may probably be drawn : the empiric, imputing the decease of the sick person to neither, the violence of the disorder, or the weakness of his stamina, but merely to the improper tendency of the medicines, will establish as a general rule, that all such remedies should be religiously abstained from ; nay more, he will invent a theory (for pure empiricism, and pure dogmatism, are very often found to produce the same effect) by which he will attempt to justify his conduct in forbidding them, asserting that they support the fever, which, without their aid, would quickly decline, while, by their irritation, they exhaust the powers of the economy. I must request that the

reader will recollect these observations, as I shall have occasion to apply them in future.

On the Mode of preventing and curing the Yellow Fever.

WE are now prepared to treat of this disease in all the varieties, which in different climates it occasionally assumes; I shall only observe, that according to the changes of physical, and moral, causes, it deserves to be distinguished as more, or less intense, a circumstance which, though it should introduce a very great diversity in the mode of regulating the patient, yet makes no essential difference in the nature of the malady. If we would wish with accuracy to determine the destructive tendency of any particular complaint, we must attend to the period, in which it was observed to commit its ravages on mankind, since even the small pox, which since the invention of inoculation, has been rendered perfectly innocuous, was before that æra, deemed the common scourge of Europe; if we read the descriptions of the plague in Homer, in Sophocles, in Thucidides, and to come nearer our own times, in Boccaccio, we shall be petrified with fear at the desolation, which it spread around. If however we view this matter with a philosophic eye, we shall be inclined to imagine, that the vivid force of the poetic fire, or the energetic stile of the historian, may have thrown additional horrors on a scene truly terrible; but if we recollect, that the three first wrote in these ages

ages of priestcraft, when physic was little more than a collection of the most superstitious rites, and that the latter described the ravages of this disease, at a still more formidable period, when the ignorance of mankind with respect to rational experiment, and their absurd attachment to empiricism, or dogmatism, made them place their entire confidence in remedies, which have been since proved the most noxious poisons, we shall be forced to confess, that the want of knowledge in practitioners, was the sole cause of this fearful desolation. To this we may add, that as sound philosophy has advanced, which medicine has ever followed, though with unequal steps*, we can observe this destructive ailment to assume a milder aspect; thus the last attacks of this disorder on the inhabitants of Europe, have been much less terrible than those formerly experienced; nay, though the treatment of putrid diseases was at that period, but imperfectly understood, still does it appear, that a pretty large proportion of the persons, afflicted, recovered from the malady. From these circumstances we may probably infer, that if the plague were, at present, introduced into Europe, it would prove no more fatal than other putrid complaints; one disorder however seems to contradict this induction of our reason, and while all other ailments appear to yield to the force of medical improvement, the yellow fever alone has, of late, been found to crest itself in opposition to science, to acquire strength with its strength, and new powers

* Sequiturque patrem haud passibus æquis. VIRGIL.

powers of destruction in proportion to its advancement. Now, as we must derogate from the goodness of the Deity, if we should suppose any disease to be perfectly incurable, it may require our serious attention to determine, whether the ravages of this malady may not, likewise, be imputed to the ignorance of the persons, who were employed in the treatment of it; men should be still more inclined dispassionately to reflect on this very interesting subject, when they are informed that the most fatal effects of this ailment were confined to the city of Philadelphia, and to our troops in the West Indies, while the inhabitants of the same islands, who remained under the care of experienced practitioners, were found to complain of no more fatal consequences from it, than from other disorders of the same nature.

I have mentioned these circumstances for the purpose of bespeaking the attention of the reader, divesting him of his prejudices, and enabling him impartially to consider the various modes of treatment, which shall be in future submitted to his consideration: having premised thus much, I shall proceed immediately to the subject of our inquiry, beginning with two remarks, taken from the history of the disease, which will be found to merit a minute disquisition, and tend to the explanation of other important matters.

In the first place, this malady is confined to the white inhabitants of the islands, and their variously coloured

coloured descendants, as it never attacks, at least in these parts, either the negroes, or their unmixed progeny. In the second, it is observed to seize on such persons, as have lately arrived from more northern climates, rather than on those, who have long been accustomed to the tropical regions, the causes of which difference I am at present to explain : The negroes habituated to a vertical sun, find not their systems in the least enfeebled by it, whereas its powerful action tends much to debilitate the constitutions of men, who from their infancy, have been accustomed to the bracing influence of cold. The constitutions of the black men, of course, possess the same degree of tone in the tropical regions, which the white derive from an approach to the pole, and therefore the former are exempt from, and the latter are liable to, weakness, the grand predisposer to the reception of all ailments, but particularly of this complaint : the suppression also of the perspirable matter, which, in order to preserve health, should be regularly protruded to the surface of the body, in either a sensible, or insensible manner, gives an acrimonious tendency to the fluids of Europeans, and renders them more susceptible of putrid disorders, whereas both the black, and white men, who have long resided in the islands, find no defect of this salutary discharge ; we cannot therefore be surprised at hearing, that the one race of people, being exempt from every thing, which could induce predisposition, should in consequence thereof, become totally inaccessible to the disease, and that the other class, being free from

one very grand cause of this tendency, should be less liable to the complaint, than persons, who have lately arrived from Europe, and who, of course, are subject to them both.

Having made these remarks on two particulars, advanced by the concurring testimony of all writers on the subject, and premised them merely for the purpose of explanation : I shall now proceed to offer, to the reader, some histories of this malady, given to us by authors of very great celebrity.

The yellow fever attacks the patient, in the first instance, with a faintness, afterwards with a sickness in the stomach, generally attended with a giddiness of the head ; to these succeed chillness, and horror, which are followed by intense heat, and fever, accompanied with darting pains in both the head and the back. We may also observe a flushing of the visage, with an inflammation, and burning heat in the eyes, vast oppression about the praecordia, frequent retchings, bilious vomiting, and repeated sighing ; the pulse is, for the most part, very quick, high, soft, and throbbing, but never hard. Sometimes however, it is very quick, low, soft, and oppressed, while the skin continues hot, and generally, though not always, in a state of humidity : blood, drawn even in the commencement of the malady, is very much rarified, and totally devoid of siziness ; the serum is very yellow, and the crassamentum, when cold, will scarcely be perceived to possess the powers of cohesion. To

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these symptoms are added great restlessness, constant tossing, uneasiness in all situations, want of sleep, or if it should take place, ever of a troubled kind, and not refreshing to the patient ; when attacked with fainting, the skin of the sick person, instead of turning pale, is observed to become yellow about the neck, and face, but as the fit goes off, they are gradually observed to assume their natural colour. Blood, extravasated on the second, or third day, is found to be much more dissolved, the serum more yellow, and the crassamentum of a florid hue, though scarcely cohering, sometimes with several black spots on the surface, marking a very strong disposition to putrefcency ; about the third day the pulse sinks very much, sometimes it is very quick, at others it does not far exceed the velocity, which has been remarked to take place in the state of health, but ever very feeble. The vomiting, if it was not originally so, is now perceived to be almost perpetual, the matter discharged is black, and coma soon supervenes. The pulse continues still weak, and quick, accompanied with cold sweats, and sometimes with fainting, many individuals being attacked with violent thirst, and others with very little. The eyes, which, in the beginning, assumed the appearance of inflammation, and, in the progress of the disease, exhibited a dusky colour, now become yellow, and that tinge is observed speedily to extend over the whole body ; this flaccitude, if it appears at an early period of the complaint, generally denotes an unfavourable issue, but, when it supervenes after the removal of the

other symptoms, it may be considered as marking the crisis of the ailment. In the latter stages of this malady, the blood is so dissolved, that it is frequently discharged from the mouth, nose, and eyes, nay, we may perceive it to be protruded through the pores of the skin ; we may also observe it, with a mixture of bile, to be evacuated in a putrid state, by both vomiting, and purging, while the urine is blended with it in a half-dissolved state. The pulse sinks rapidly, and becomes intermitting, respiration is laborious, and the anxiety insupportable ; an oppression, and heat, are observed about the præcordia, though the extremities, at the same time, are covered with cold sweats. A perpetual delirium, a total loss of sense, putrid spots, particularly about the breast, ^{and} ~~which~~ gangrene in other parts quickly ensue, ^{which} ~~and~~ are speedily succeeded by death.

Such is the history given to us of this disease, as observed in the islands.

I shall now offer to the reader, another account of it, as viewed by the practitioners in the province of South Carolina ; we shall perceive that it differed somewhat, in its mode of attack, from that already described, for, before the disorder shewed itself, the persons were generally attacked with headache, pains in the loins, and extremities, total loss of appetite, weakness, and lassitude, though some never previously complained of these symptoms ; the pulse was generally observed to be full, and hard, though

though sometimes small, and hard, at others soft, and small, but continually varying. Some patients were affected with a throbbing in the carotids, and the hypochondres, particularly in the latter, where it occasioned a tremulous motion of the abdomen, which continued without abating; the heat in general did not exceed an hundred, and two, degrees of Farenheit's thermometer, though it frequently varied. On the first day in some patients, the returns of chillness were observable, though there was not the smallest diminution of heat, but, in a few individuals, the abatement of it for a short time was attended with a pulse, soft, less frequent, and the skin so moist, that a person might naturally conceive it disposed to assume the form of an intermittent. On the first day, the sweats were for the most part profuse, and general; on the second they were less violent, but in proportion to the diminution of them, did the febrile heat and uneasiness increase; restlessness, and almost continual jactitation supervened, and a great despondency attended the patient, accompanied with a very great prostration of his strength. On the third day the sweats abated, and the skin generally became dry, the respiration was neither frequent, nor laborious, but by the slightest motion it was rendered quick, as well as difficult; on the first, and second, days the tongue was moist, rough, and white, which two latter symptoms diminished on the third, nor was the thirst, in general, very great. In the same proportion, that the symptoms of re-action decreased on the third day, did the vomiting begin, though a

very few were attacked with it on the first ; a small number of individuals were affected with oppression about the præcordia, and the pains, complained of before the commencement of the malady, became more violent on the febrile access, but they were generally removed on the second day.

Some persons became delirious on the first day, but the blood, extravasated, was observed to continue in one homogeneous mass, without any separation into serum, and crassamentum ; the urine generally deposits at this time a white sediment in very great abundance, which, on the second day, assumed a brownish colour, but on the latter end of it, or in the beginning of the next, this was found to be succeeded by bloody urine, while, from the commencement, the bowels are constricted, but when stools could be procured, they ~~were~~^{were} bilious, and putrid.

The gentleman, who gives us the history of this disorder, asserts, that the fever terminated in less than seventy-two hours : but here we may observe, that what he is pleased to call the termination of it, is merely the assumption of its own proper form, since all the deadly symptoms quickly ensued ; as they, however, exactly correspond with those, before mentioned, I shall merely take notice of one single circumstance, viz. that after this supposed recess of the disease, the pulse became first small, and hard, next, small, and soft, thereby marking a progressive increase of debility.

To

To this history of the Carolina fever I shall add a second, given by another gentleman of very great celebrity. In two, or oftener in three days, before the beginning of the complaint, the patient is attacked with pain in the head, loins, joints, but chiefly in the knees, and the calves of the legs; to these want of appetite, lassitude, and weakness succeed, after which the disease commences with standing up of the hair, the pulse is frequent, and often hard, there is a pulsation in the carotids, and the heat arises to, but does not exceed an hundred, and two degrees of Fahrenheit's thermometer, generally persevering without any remission, for the space of two days, but accompanied with sweating about the head, and neck, which, on the third day, was found to disappear. Respiration was moderate, accelerated however by the very least motion, or even by deglutition, the tongue is moist, rough, and white, but in the middle it is brownish. About the second day a moderate thirst is perceived; on the third the heat, the sweating about the head, and neck, diminishing, with a sinking of the pulse, nausea, and vomiting, speedily supervene; the hypochondres are neither tense, nor hard, and on the first day somnolency is perceivable. As these symptoms are sufficient to shew a general conformity of this disorder, with others of the same nature, and at the same time to mark some specific distinctions, I am, in the next place, to offer to the reader, an account of this ailment, as it was observed to attack the city of Philadelphia.

This we find in a pamphlet, lately published, expressly on that subject; and, as this work has met with an uncommonly favourable reception, as it has been the grand director of the persons, concerned in the treatment of our navy, and army in the islands, which I fear, has produced the most baneful effects, it becomes necessary for me to pay to it the most particular attention.

A chillness is at first perceived, to this succeeds a quick, and tense pulse, hot skin, pain in the head, back, and limbs, flushed countenance, inflamed eye, moist tongue, oppression, with a sensation of soreness in the stomach, more particularly when pressed; these are followed by retching to vomit, without, however, discharging any thing more, than what had been lately thrown into that bowel. Costiveness generally took place, and when evacuations of the intestines were procured, the first stools marked either a want of bile, or an obstruction of the ordinary passages, which was, however, soon removed by smart purgatives; these symptoms shewed themselves from the first, and through the intermediate days to the fifth. For them were substituted a yellow tinge on the cornea of the eyes, a still more violent oppression in the præcordia, an immediate vomiting of every thing swallowed, accompanied perpetually with a hoarse, and hollow sound.

Now here the reader must clearly perceive, that the fever had, at this time, assumed its proper form,
but

but what follows will more fully confirm it, for the author instantly adds, if these symptoms are not speedily relieved, the black vomit, the certain fore-runner of death, haemorrhagy from the nose, and other parts of the body, a yellow, and purple colour, putrescency of the economy, hiccup, agitations, deep sighing, and coma, were observed to supervene, which were succeeded by the final dissolution, and this fatal event generally took place from the fifth, to the eighth day.

In some cases however, symptoms of putrefaction were remarked to appear before the third day was concluded, and in these immediate yellowness, black vomiting, with a mild delirium, and vast prostration of strength were speedily displayed; in some instances he observes, that they assumed rather the nervous than the inflammatory form, but here, I think, he has been guilty of an unpardonable error, in confounding the appearances of nervous weakness with those of putrescency, and still more so, in not distinguishing between the latter, and those of inflammation.

Inaccuracies of this kind are frequently attended with the most dangerous consequences, as they teach men to mistake the nature of diseases, for, if they observed any malady to resemble another in appearance, they might naturally conclude that the analogy was perfect, and treat them in conformity with this fallacious opinion; physicians have long agreed to refuse the appellation of nervous disorders

disorders to such, as exhibit the slightest symptoms of putrefaction, and though the author does not say, that they actually did, but that they seemed to assume the nervous form, still he has thereby tended to throw a degree of confusion on a subject, which must be allowed to have required the utmost clearness, and precision. He has committed a greater fault, by uniting, in the same ailment, the appearances of two complaints, the most opposite in nature: for symptoms of inflammation he should therefore have substituted those of re-action, since the latter, in some degree, take place, even in the most putrid diseases, whereas the former are never produced, but by the application of cold to a system, which was endowed with a high degree of tone; and with respect to the propriety of this distinction, I shall express my sentiments more particularly hereafter.

Having offered to the reader histories of the more, and less intense, kind of the yellow fever, I shall make only one observation on them all, viz. that, while the symptoms of re-action continued strong, the vomiting was either unknown, or very moderate, and none of the other deadly symptoms appeared; but when the former were perceived to decline, the vomiting became incessant, and the other fatal appearances may be remarked proportionally to increase. In the progress of the Philadelphian fever, it was, for the first time found out, that the negroes were no more exempt from it, than the white men, while the French were peculiarly secured from

its aggressions ; this attack on the descendants of the Africans, so contradictory to what is remarked in the islands, must naturally be imputed to the north-easterly climate, and to a fuller mode of living, which occasioned their constitutions to resemble those of the other inhabitants, who were for the most part either Englishmen, or their descendants. But it may be demanded, why the French were so peculiarly favoured ? To this I reply, that their exemption from the disease must be ascribed to their diet, a circumstance, which I shall explain more fully in the sequel.

To these extraordinary observations I shall add another remark, by no means less singular, viz. that notwithstanding the violent ravages, committed by this malady, some persons have doubted, and still continue to doubt, whether it should be deemed contagious, or otherwise, nay, many gentlemen of the faculty have given their decided opinion, that it was by no means infectious ; there are, however, too many instances of its being conveyed in the clothes of the deceased, and thereby communicating the ailment, at a very great distance from the country where it prevailed, to admit even ~~not~~ the smallest dubiety on the subject. This mistake, in regard to the contagious nature of the disease, has been induced by ignorance of the following truths : first, that the most deadly infections are most ponderous ; and secondly, that they are much less capable of being communicated by the human body, than of being conveyed by wearing apparel, or bed-clothes,

through

which means they acquire a ten-fold concentration ; but that this was a most fatal error, must with the greatest reason be allowed, since it has prevented men from pursuing proper means of security. Now, these circumstances not attended to, it is by no means wonderful, that many persons should approach the sick man, without experiencing the smallest inconvenience, and that this should be deemed an infallible proof of the perfectly noncontagious tendency of the disorder ; nor can it prove surprising, that the vulgar, impressed with this absurd idea, should neglect every method of rational preservation.

We are now supplied with fundamentals for an inquiry into the nature of this disease, and whether it has been treated with propriety, or impropriety ; but before I engage in this task, it is necessary to observe, that we must consider the complaint in a double point of view, first with respect to prevention, and secondly, in regard to cure. It has been often debated between the persons, who have maintained the contagious, and the noncontagious, qualities of this fever, whether it is the endemic of the countries, or has been produced by the same means, that other febrile disorders have been supposed to be generated, I mean by the action of the dews, and other concurrent causes, as dancing, or ebriety ; now though I readily allow, that any prior tendency to putrefaction being given, exposure to the dews, and any other impropriety, in the conduct of the person, may excite a febrile complaint, which, under such

such a climate, aided by peculiar circumstances, will probably ere long assume this hateful form, yet am I strongly of opinion, that the damps of the night, without predisposition, or the action of noxious effluvia, can never prove capable of inducing the yellow fever. I shall suppose the dews, by checking perspiration, to produce intermittents, and shall admit, that with the aid of predisposition, they may generate this complaint, but still do I maintain marshy, and putrid miasmata, to be the grand occasional causes of the disorder; nor can the slightest inconvenience be apprehended from this opinion, even if it should ultimately prove 'to be unfounded, since I acknowledge the former to be very injurious, and no man, in his senses, can deny the latter to be more highly deleterious, consequently too much caution cannot possibly be used. On the whole, whether this complaint is produced by marshy, and putrid miasmata, as we find the plague to be in Grand Cairo, or the fever is generated by a suppression of insensible perspiration, and assumes the putrid form in consequence of predisposition, in either case it must be considered as the endemic of the country, since both the occasional, and predisposing causes, must be imputed to the soil, or the climate. As this disorder is the native of the country, and may be avoided like other contagious diseases, for the benefit of human nature, it therefore becomes the indispensable duty of every physician, but more particularly of such, as attend the troops of his Majesty, to prevent if possible, the first attack of the malady; and as this is an object of the most

serious consideration, I shall point out the means, by which it may probably be attained.

The choice of the ground, on which the army is to encamp, becomes a matter of the most momentous concern ; the situation should be elevated, and the tents should be pitched at no very great distance from some limpid stream of running water, lest, for want of the pure fluid, the men might be obliged to use such, as was vitiated, which, in warm climates, proves highly destructive ; it must likewise not be to the leeward of any morass, because the wind blowing, regularly from east, to west, the marshy effluvia would then be continually directed against the troops ; the soldiers should ever be furnished with boarded bedsteads, raised three feet above the ground, since all contagious air being more ponderous, than atmospheric, by this means would they become less liable to the action of the former ; the greatest cleanliness should be observed, both in their persons, and every thing around them, nor may it prove unserviceable to burn every night in their tents, more particularly in the rainy season, torches strongly impregnated with fulphur, as they will contribute to either the diffusion, or the correction of noxious vapours. The diet of the troops should next engage the attention of the physician ; it has been often remarked, that out of any given number, the loss of the English cut off in the tropical regions, when compared with that of the French, is in the proportion of seven to five, when with that of the Spaniards, is as seven to three : such

such vast disparity some persons have attempted to account for on this principle, that the two latter nations were accustomed to a greater degree of heat than the former ; but though no man in his senses will attempt utterly to deny the influence of habit, still is the difference in the temperature of the air, between our island, and the northern parts of France, but still more so, between the contiguous provinces of that kingdom, and of Spain, so exceedingly trifling, that we cannot reasonably ascribe to it such very great efficacy, on which account I shall strive to offer, to the reader, a somewhat better explanation of the fact.

The English eat large quantities of animal food, and very little vegetables, the French support themselves chiefly on the latter, with a very small proportion of the former, from which the Spaniards almost totally abstain : our soldiers in the West Indies, and particularly on service, are obliged to live almost entirely on salt provisions, which are ever found to be indigestible, and putrescent, whereas the other nations use it in the degrees, already established ; while they correct the noxious tendency of it, by such watering as perfectly extracts the saline particles, and by the use of spices, applied in abundance. The breakfast of an Englishman, in most quarters of the globe, but especially in the tropical climates, consists of tea, or coffee, with the addition of bread, and salt butter, perhaps of salt meat, all which are taken in very considerable quantities ; whereas the French add, to their biscuit, a moderate share of fruit, and

and the Spaniards are content with the simple relish of an onion. Now all narcotick substances destroy the powers of the stomach, and intestinal canal, while the acrimonious qualities of the substances, which they conjoin with them, give new force to bilious, or putrid irritation, and the costive habit, induced by these destructive fluids, exclude all hope of a natural evacuation.

But if the English are found to be imprudent in their mode of eating, they will be perceived to be still more so in regard to their use of liquor, whether in respect to the quantity, or quality. The common drink of our soldiery is grog, or a compound of spirits, and water, the former probably quite hot from the still, which, taken in any quantity, deserve with the greatest reason, to be deemed a poison, though the fatal effects of them are somewhat more uncertain, than those of laudanum, or arsenic. To the use of such spirits, the soldier, if left entirely to his own guidance, must naturally be impelled, first, by the force of habit; secondly, by the facility, with which they may be had; and lastly, by the cheap rate, at which they may be purchased; whereas such as have acquired age can with difficulty be procured, and at a very great expence, the price of them being higher in the islands, than in London. But he is not exposed merely to the dangerous effects of the liquor, since the consequences are equally fatal, with the cause, for feeling himself inflamed ~~in~~ this liquid fire, he will be necessarily inclined to seek for woman, in expectation

ration of allaying it ; while in searching for an object of his ardent desires under the favouring shade of night, he will subject himself to the baneful influence of the noxious vapours, and by courting a pleasure, which he is incapable of enjoying, he will expose himself to the hazard of such maladies, as in his circumstances, it is scarcely possible to escape.

The French, on the contrary, drink wine, either pure, or diluted with water, and that with great temperance, while the Spaniards use the same kind of beverage, but so very abstemiously, that to see a man of this country drunk, is an absolute prodigy : it is not therefore wonderful, that these nations, being secured by their mode of living, from predisposition to, and as they act under the direction of reason, cautiously avoiding the occasional causes of diseases, whether generated by contagion, or otherwise acquired, should be generally exempt from the attacks of putrid ailments, or if they should unfortunately happen to seize them, that they should struggle with them like men, and should, for the most part, overcome them.

Having now pointed out the principal causes, which render our troops so liable to putrid diseases, we are thereby enabled to propose a mode of preserving them from such attacks. Now since the use of salt provisions proves so highly injurious, it follows of course, that they should be either totally inhibited, or if that may seem impossible, as fresh meat cannot at all times be procured, that the destructive

tructive tendency of them should be corrected by a large admixture of vegetable food ; I should therefore recommend to have all the animal food, which has been indurated by salt, cut into small slices, to have warm water poured on them until all the saline particles were extracted, and to add to every pound, when treated in this manner, at least five times as much roots. To the more acescent vegetables may be united those of the alliaceous tribe, to which may be joined considerable quantities of spice, both calculated to correct the indigestible qualities, and flatuosity of the former ; these useful purposes will be farther promoted by boiling the entire compound to rags, and thus a wholesome dinner will be procured for the soldier, the acidity of the first ingredients tending to correct the putrescency of the salt meat, while the soup obtained by this process, could not fail to afford him a very comfortable, and salutary supper, nay, breakfast, also, with the addition of his biscuit. I have already observed, that the solids, taken by Englishmen for their breakfast, naturally tend to generate bilious, and putrid acrimony, while the narcotic fluids, which were used to dilute them, lock up the intestines, nor suffer it to be ejected : the person therefore who can hesitate at determining, which of them should be chosen, may, with equal reason, doubt, whether life, and health, are preferable to death, and to disorders. But no where has the beneficent hand of Nature been more liberal of her choicest gifts, than in these parts of the globe, for here the vast quantities of vegetables render it an easy task to supply the troops with abundance ; here

spices

spices may be had for the bare trouble of gathering them, and the highest flavoured fruits, in gratifying the palate, remove the disagreeable importunities of thirst.

Now, I think, we may apply to all these productions of the warmer climates, an opinion, which Van Swetan has expressed with respect to the latter alone, "No man can ever persuade me, that the benevolent Author of nature could have laid snares for the human race *." The savings accruing from this regulation, by which the ration~~s~~ of the soldiery should consist of vegetables, to meat, in the proportion of five to one, if judiciously managed, would enable the commanding officers to purchase fresh provisions, whenever they could be procured (and it is almost needless to add, that such should ever be preferred); but, when they cannot be had, would afford to every man several comforts of life, to which he is, at present, an absolute stranger. With the view of determining this matter, let us suppose all the forces, which were destined for tropical climates, before they leave their native soil, to have been prepared against their noxious tendency in the manner abovementioned, and let us then calculate the difference of expence, between this mode of feeding them, and that generally pursued.

* "Nemo mihi unquam persuadere potest, quod auctor naturæ be-
neficiis insidias humano generi struxisset."

* NB a military word, ex: Ireland
expressing the proportion of
provisions allowed to each
man

Ireland is the country, in which our navy, and army, for the most part are victualled. In order, therefore, to arrive at precision on this subject; I shall form my estimate, according to the rates, prevailing there; the average price of beef amounts by the hundred to twenty-eight shillings, and that of pork is very much above it; but the same weight of potatoes may be bought on the very reasonable terms of one shilling, and eight-pence; as therefore the latter sum is to the former, such is the value of vegetable, compared to that of animal food; consequently, as one shilling, and two-thirds, are to twenty-eight. The ration of every soldier, as at present established, is limited to one pound of meat, and an equal quantity of bread, of course, an hundred, and twelve, persons consume an hundred weight of animal food in each day; but let them be fed in the manner, I have directed, in every six days there will be found a saving to government, amounting to six pounds, eleven shillings, and eight-pence, which sum, when expended on the necessaries, or comforts of life, might render almost enviable, the condition of the private man, compared with the state of the vulgar in general.

If the physician is bounden to pay particular attention to the diet of the soldiery, the regulation of their liquor, whether in regard to the quantity, or quality, demands, in the highest degree, his most serious consideration, as it becomes essentially necessary to the preservation of their health. In tropical regions, the best spirits are injurious, but such,

as are new, must be deemed real poisons ; and for this reason I should recommend the substitution of good English porter, as a liquor equally tonic, and antiseptic, as producing much more permanent effects on the system, and enabling it to support a greater degree of fatigue. To this it may be objected, that it will be attended with either too great trouble or expence ; but in answer I assert, that the vessels, which convey the troops, can carry out a sufficient quantity, while the savings, already mentioned, if properly applied, would allow each soldier a quart of it each day.

But if this should be rejected, I would advise government to contract for large quantities of old spirits, which should be delivered into the hands of a particular officer, to whom it might be enjoined to keep a watchful eye over all inferior persons, who were to distribute them among the troops ; he ought then to give to the serjeants of the several regiments, the quantity allowed to each, in proportion to the number of men, fit for duty, to add to the rum eight, or nine, equal quantities of water at the least, before they presumed to divide it among the privates, while all the sutlers should be inhibited under absolute pain of death, from selling any liquor whatsoever to the soldiery.

The time of the day too, in which soldiers should be employed, seems next to demand the attention of the physician ; it ought to be an established

maxim, that no man should be engaged in any kind of labour until the sun had risen above the horizon for an hour at the least, and that he should desist from his work before this our grand luminary had declined beneath it; the reason of this injunction is exceedingly obvious, for as the sublimating force of heat raises from the morasses every impure vapour, it is very dangerous to expose any persons to the action of the atmosphere, until the whole of it has been completely elevated above the earth, and as on his decline the dews begin to fall, it is almost equally necessary to guard against their influence.

I have now pointed out the injurious tendency of the dews, with the deleterious effects of the marshy, and putrid effluvia, in consequence of which, commanding officers ought to be exceedingly cautious of exposing the troops to the influence of either; but, as the operations of a campaign will not allow the same attention to be paid to the preservation of the soldiers from the causes of disease, as may be bestowed by people in civil life, and they may be necessarily exposed to the dangers now mentioned, it becomes requisite to prepare the forces, as well as possible, to resist them. This may be done by obliging them to take some proper kind of aliment before they go on duty; by giving to each of them a glass of strong bitters in a tumbler of Madeira, or if that cannot be afforded, in a small quantity of old spirits, mixed with water, ordering every man to carry about with him some strong perfume, such

as musk, which may sheath from noxious vapours the sentient extremities of their nerves in the organs, to which we are indebted for the faculties of tasting, and of smelling.

To these observations on the method of preserving our forces from the first attacks of disease, I shall now add a simple caution, which may tend to check the propagation of all contagious ailments among the troops; in the first place, the hospital should be attended by negroes alone, who should not on any account be allowed to quit the precincts of it, without having first changed every single atom of the slight covering which they wear; in the next place, the soldier, as soon as dead, should, with every thing that touched him, be immediately inhumed by the persons, who took care of him. But if avarice should prove deaf to this salutary admonition, the attendants should be obliged to immerse them immediately in water, and suffer them to continue in it for a long time, after which they should be scoured, and continually exposed to the air for many days.

Having premised thus much on the mode of prevention, I shall now proceed immediately to the method of cure, and on this head I shall presume to lay before the reader, first, the general mode of treating this disease; secondly, the special manner lately introduced in Philadelphia, and thence transferred to the West Indies; thirdly, I shall
make

make my comments on each of them ; and lastly, I shall attempt to deduce from experience, under the torrid, and temperate zones, a practice, which will appear in most respects quite new, yet shall be supported by reasoning from analogy, corroborated by the general principles of physic, and established by facts, if not in great numbers, still particularly impressive, the authenticity of which can be attested by several gentlemen of undoubted veridicity.

The indication of cure, according to the best ancient writers, is, first, to moderate re-action ; secondly, to evacuate with expedition, both biliary, and putrid acrimony ; thirdly, to correct the putrescent tendency, whether in the fluids, or the solids. The first part of this indication is, according to these gentlemen, most effectually answered by the use of venesection ; this remedy, however, is liable to a great many objections, is beginning to be disused by modern practitioners, nay, the ancients allow, that the lancet should not be employed after the third day.

These circumstances should, I think, incline men to admit, that the use of it ought to be exceedingly restricted, but I shall offer arguments in support of an assertion in general contradictory to the opinions of mankind, which notwithstanding, I hope, will evince it to be perfectly consistent with the highest degree of medical improvement ; before, however, I engage in this task it will be necessary for me to offer to the reader a short account of the fatal consequences

sequences entailed on medicine by the lapse of Europe into barbarism, and of the happy effects, which ensued from her elevation to her present enlightened state. The destruction of the Roman empire entailed on the Western World the opposite extremes of feudal anarchy, and abject servility, of affected wisdom, and absolute ignorance; to these were added the despotism of superstition, which as it derived support from the unintelligible jargon of the Aristotelian philosophy, fulminated the thunders of the church in support of it, forbidding men to contradict this supposed oracle, though in conformity with the scriptures, which she pretended to revere. Never was there formed a more formidable union against science, for the logick of Aristotle taught men to conceal the most profound ignorance under the specious veil of technical astuteness, while superstition forbade them to engage in any rational inquiries; it is impossible that mankind should have ever shaken off so weighty a yoke, had not a large number of favourable circumstances most fortunately concurred, which it shall be my present business to relate. The crusades first convinced the Europeans, that they were savages, and gave them some little relish for the elegant works of art, while the taking of Constantinople, with the subsequent dispersion of the learned Greeks, afforded them an opportunity of becoming acquainted with a language, which contained the elementary principles of all science; in 1302 Flavio Gioia, a citizen of Amalfi, discovered the tendency of the needle to the pole, and made to naviga-

ors an inestimable present, since before this period, whenever men attempted to lose sight of land, they were obliged to direct their course by the sun, or the stars, which were frequently obscured, and at the best, but very uncertain guides. This invention indeed seemed to promise mankind an empire over the main, yet so dilatory were they in availing themselves of it, that near two centuries elapsed, ere they laid claim to the dominion of the ocean; at length in 1492 Columbus engaged in the enterprise of discovering a westerly passage to the East Indies, which offered to his view an immense continent, and before that time unknown, while Vasco de Gama undertook the long forgotten passage round the Cape of Good Hope, which he accomplished in 1498. These events soon forced men to open their eyes, and roused them from the torpid indolence, which had hitherto suspended every faculty of the human mind, while at the same time they furnished materials for its exertions; the face of all Europe began rapidly to change, and it became the established policy of monarchs to emancipate subjects from their state of feudal slavery, with the view of breaking down the overbearing power of the Barons. Princes also began to conceive more enlarged notions, vying with each other in their schemes of distant conquests, in the encouragement of the arts, the promotion of manufactures, and the advancement of commerce; we now behold wretches who, until of late, could scarcely boast themselves superior to the beasts, prove their souls expanded with the proud spirit of emulation;

see common soldiers displaying the magnificence of noblemen, and thereby encouraging all their countrymen to pursue a similar course of lucrative adventures. But before men were engaged in actions which so loudly called forth the attention, there was found out an easy mode of giving perpetuity to their ~~labours~~^{fame} by the invention of printing, which took place in 1450; from this period the difficulty, the delay, and the expence of copying manuscripts were totally laid aside, and knowledge which had been formerly confined to the wealthy, was now indiscriminately offered to all mankind. Greater events speedily ensued, for in the conclusion of the sixteenth century the illustrious Bacon was born, whose penetrating mind pervaded all nature, and shewed the rest of mankind designed by the Deity to operate like journeymen, in obedience to his commands; if before this period the dawn of science was perceived, her beams, like those of the sun when risen above the horizon, had now acquired strength, and had begun to disperse the mists of ignorance, with the phantoms of false philosophy: But envy ever pursues such transcendant merit with the same certainty that shadow attends substance, for in the year 1621, an unmerited and cruel sentence of the Lords prepared that slow poison, which in a few years, produced the dissolution of a man, whose life had been cheaply purchased by the extinction of the British nation. Italy at this time was possessed of arts, and that made a rational preparation for the introduction of science, which did not long cease to follow them; the mathematical

school of Gallileo therein began to introduce a taste for useful knowledge, and though he himself, having asserted in contradiction to scripture, that the earth moved round the sun, was obliged to renounce, before the tribunal of the Inquisition, this his error, as damnable, and heretical, still did the opinion not fail to make a lasting impression on every strong mind. It was unlucky, indeed, that he did not introduce this conception by a quotation of some unintelligible jargon from Aristotle, which he could by wresting, render apparently favourable to it, for then he might have despised Moses, and the prophets. Bacon was indeed ably followed by some persons in England, who well merited the honourable appellation of his disciples, yet still was it very long ere the throne of true science could be erected on the ruins of prejudice, and illusion, for the principles of Newton, and the metaphysics of Locke, both genuine emanations from this pure source of wisdom, were for a great while rejected by the several nations of Europe, and not generally received before more, than half of this century had elapsed. But medicine has ever been the humble handmaid of philosophy, is it not wonderful therefore, that when the decoration of the mistress had only commenced, the attendants should remain in a state of total negligence, and thus has, it happened that before the last thirty years very imperfect lights have been thrown on the art of healing; I must also remark that improvements in all sciences, and more particularly in physic, must have been frequently demanded by the strong voice of

of necessity, ere practitioners could be roused from the slumber of indolence, or the dreams of illusion; no person of course can be surprised at hearing, that when this powerful stimulus to industry was wanting, they should rest contented with a very moderate share of knowledge. It is not half a century since the luxuries of either India were entirely confined to the richer class of men, nor had yet spread among the poor, their baneful effects; the violent excitement of spirits had not before occasioned a proportional collapse, nor had tea, coffee, and other narcotic substances, which ever tend to unstring the human system, as yet induced a total debility of the economy; before this period, the frequent feuds, which happened among the barons, and which frequently called their vassals into the field, joined to constant labour, gave tone to their systems, and excluded them from predisposition to putrid disorders; the hardihood of chivalry, the spirit of adventure, which immediately succeeded to it, and the attachment to athletic exercises, which universally prevailed among the lately emancipated inhabitants of each nation, must tend very powerfully to produce the same effect, and consequently diseases must have generally assumed an inflammatory form. Now as disorders of an opposite nature were but seldom observed to visit this quarter of the globe, and a variety of circumstances conspired to establish a similar mode of treatment in all species of fevers, we cannot be astonished at finding, that men who received their education in schools, where these doctrines were universally inculcated, should prefer

fer experience, though ill founded, or a chimerical theory, to profound enquiries into nature under the guidance of philosophy; thus has an ill-founded prejudice in favour of persons, whom they were taught to revere as the oracles of truth, though at best they only merited the appellation of learned idiots, induced their admirers to apply principles, not adapted, to every possible case, under every opposite climate.

When, however, philosophy had approached the zenith, medicine, the planet, which ever attends this sun, and shines merely with a borrowed lustre, became not only irradiated, but derived also from the genial beams of this resplendent luminary, an activity, before unknown, conjoined with an energy, which had hitherto been unheard of; necessity also had added a powerful stimulus to industry, for luxury, by pervading, and enervating every rank in society, had totally changed the appearance of complaints, had introduced the whole train of nervous diseases, and rendered men more susceptible of putrid disorders, which their commerce, now extended to every quarter of the globe, did not fail to make adventurers feel sorely, and frequently to import into the country, which sent them out. Physicians at this time, being both more enlightened, and more strongly excited, having likewise extricated themselves from the weighty trammels of empiricism, and dogmatism, began to abstract from, and to generalize their facts; they soon therefore perceived the very striking difference, nay, opposition, which subsists

fists between inflammatory ailments, and such, as assumed the nervous, or putrid form, establishing as a maxim, that bleeding should be confined to the former species alone. But to conceive, that the principles of able men, should be either fully comprehended, or steadily adhered to by the herd of practitioners, is to suppose that every apprentice of every apothecary, and without the slightest tincture of erudition, may, in the course of three years, be converted into a philosopher.

I hope the enlightened reader will pardon my diffusion, both here, and elsewhere, on the mode of philosophising, with respect to the study, and practice of physic, but when he considers the persons to whom I write, he will, I fear, think me rather too concise ; these observations well understood, even the ignorant will comprehend the grounds of those strictures, which I shall be obliged to make on the method, now established for the treatment of the yellow fever, and of entering also into the spirit of my intended improvements.

I already observed, that in the treatment of this disease, the use of venesection should be very much restricted, but I now maintain on principle, that it ought to be entirely laid aside in all putrid disorders, and to be confined to such as were purely inflammatory, since the more judicious physicians abstain from it even in those maladies, which exhibit such violent symptoms of reaction, that ignorance might well mistake them for those of inflammation ; men

of philosophic minds, and of experience, perceiving however, that such appearances are generally succeeded by those of debility, of putrescence, or of both, will be very cautious of drawing off the vital fluid, which they may afterwards wish, in vain, to restore, unless fixed local pain, with a full, and hard pulse, should mark some of the noble parts to be violently irritated. I already remarked, that reaction was of two kinds, the one occasioned by application of cold, to a system, which is endowed with a great degree of tone, and the other caused by the noxious influence of contagion on the human body, it therefore remains for me to explain the manner, in which two opposite agents can give rise to appearances exactly similar, or differing in degree alone: now the sedative power of cold immediately produces a suppression of perspiration, and of course the fluid, which was conveyed through the pores, must be immediately determined to the internal parts of the machine, and will be directed to the weakest portion of the economy; according to this maxim, *eo ruunt fluida quo facilius admittuntur.* But the perspirable matter is the most acrid part of our fluids, and, wherever it is determined, it will necessarily induce irritation, and obstruction, while the powers of resistance in the economy, presupposed exceedingly vigorous, by attempting to overcome the former, will in the conflict between them, produce an inflammation, the symptoms of which continue unchanged through the whole course of the disease; on the other hand, the baneful efficacy of contagion, excites the powers of the economy to resist

resist, and expel from it a lethiferous infection, the action of the former continuing in varied degrees, until it is entirely oppressed by the latter; it is not therefore strange, that both of them proceeding from the very same cause, viz. the efforts of nature to relieve herself from every thing injurious, should exhibit in the commencement, appearances somewhat similar, which in putrid complaints should gradually decline, and in the same proportion, that the vital forces were overcome by the disease. Now in purely inflammatory maladies, marked by a local pain, with a full, and hard pulse*, the danger proceeds from this, that the violence of the reaction produces inflammation, and threatens destruction to some noble part, whereas in such, as are putrid, we need only apprehend, that the powers of resistance may be subdued by the disorder; in the former case venesection, which diminishes the strength of the economy, must therefore prove serviceable, and in the latter destructive. With respect to those, which do not clearly assume either form, sound reason forbids so dangerous a remedy, until we perceive an evident necessity for it: nor can these remarks fail to suggest the propriety of substituting, in the description of all putrid ailments, symptoms of reaction for those of inflammation; if then venesection should be applied, merely, in those diseases, which assume the latter form, and even in northern climates, where the tonic effects of cold ever tend to

brace

* Enteritis, or inflammation of the intestines, in which the pulse is hard and not full, is the only exception to this general rule.

brace the system, what madness must it not be to have recourse to it in putrid disorders, and in tropical regions, where the broiling influence of a vertical sun enervates the machine, increases bilious acrimony, diminishes the force of both the heart, and arteries, by the action of which, the discordant particles of the vital fluid are blended in a mass, apparently homogeneous, while the lethiferous contagion communicates also a perpetual tendency to putrefaction. But if this absurdity is evident to reason, it is confirmed by experiment (if that can merit the name which was instituted in total contradiction to common sense) for the blood drawn was found to be in such a state of corruption, that it was incapable of being resolved into serum, and crassamentum ; the consequences which followed, confirm, in the most striking manner, the murderous tendency of venesection, since hæmorrhagies soon ensued from the mouth, eyes, and nose, nay, from the very pores.

But it will be objected, that persons, thus treated, have been known to recover : to this I reply, that some people have been endowed with such strength of constitution, as has allowed them to take with impunity, things which would prove direct poison to other men ; that I myself have seen a native of Ireland drink five bottles of brandy without intoxication, and have known an Indian savage to fast for seven days without any appearance of weakness, at the conclusion of which period, he has eaten ten or twelve pounds of food without the slightest inconvenience :

venience, and yet I shall maintain, that the person who regulated his patients in either manner, would speedily dispatch the much greater part of them.

When the French academicians employed themselves in mensuration, in order to determine the figure of the earth, their first attempts on which were since found to be fallacious, Newton rested satisfied with the force of demonstration, but general principles, deduced from experience, fall little short of such knowledge, and accordingly Rousseau informs us, that if he thought he had seen a ghost, he would order his physician to be immediately sent for; so well convinced are sound philosophers, how little dependence can be placed on a particular observation, whenever it contradicts the clear inductions of reason, or the general remarks of wise men,

Now both reason, and experience, equally prohibit the use of the lancet in all putrid complaints; the person therefore, who still ventures to apply it in this, the most highly putrid of all maladies, proclaims war against science, and strives as far as in him lies, to establish the conjoint reign of ignorance, and empiricism. It must be allowed, that venesection is beginning to be laid aside in the treatment of this disease, modern practitioners seldom applying it, unless in the case of persons, lately arrived from more northerly climates, yet as it still continues to be ordered, it ought to be proclaimed a direct assassination, a truth which will readily be admitted by

every man, who considers that, as the symptoms of reaction diminish, the vomiting increases, and all the lethiferous appearances ensue.

The second part of the indication is, to evacuate with as much speed, and safety, as is possible, both bilious, and putrid acrimony, for which purpose a vomit would seem necessary, but such (say ancient practitioners) is the irritability of the stomach, that nothing of this kind can possibly be admitted; now this is another error, which has been probably introduced by their forming an opinion of such remedies in general, from a misapplication of them in some particular cases, for I myself have used several sorts of them, but more particularly the tartar emetic, with the most striking advantages, and the former illusion is every day losing ground. Instead of emetics, these gentlemen order large draughts of warm water, which, according to them, allay inflammation of the stomach, and thereby tend to correct any putrid tendency in it; now here a complication of mistakes is presented to us, for what they call inflammation, is merely an irritation; this, instead of being the cause, is the effect of putrescence; and heat, instead of repressing, encourages putrefaction in all parts of the economy.

After this, in order to prevent irritation, they introduce, into the stomach, a grain of solid opium, inhibiting any thing else to be swallowed for two hours, after which they recommend acids, with other

other antiseptics ; now the administration of solid opium, to me appears exceedingly injudicious, since an immediate effect is required, and the medicine cannot be easily dissolved, or act equally on that bowel. If this treatment does not produce stool, they conceive it very proper to administer a clyster, with an antiphlogistic and antiseptic laxative ; now, as the antiphlogistic part was prescribed in consequence of a false theory with respect to inflammation, as the intention is to evacuate biliary, or putrid acrimony with all possible expedition, and as there is often reason to apprehend no trifling obstruction of the biliary ducts, such purgatives should be prescribed, as are known to have the greatest affinity to the bile.

The third part of the indication is to correct the putrid tendency in both solids, and fluids, but though the most powerful tonics seem requisite, they had recourse merely to the snake, or columba roots, maintaining the irritability of the stomach to be so great, that bark in any form could not possibly be retained ; now, this opinion also is founded on a prejudice, for modern practitioners have begun to prescribe, and I have exhibited it in the most powerful manner, that is adopted in Europe. Advancing gradually from the tropics to the Norward, we may perceive the symptoms of re-action to increase, and accordingly we find, that in the fever of South Carolina, this did actually take place, though we can perceive no change in the treatment of it to be introduced ; but as we proceed farther from the

equator, we observe the powers of resistance in the economy proportionally to augment, for in the fever of Philadelphia, the pulse at the beginning was ever found full, and hard, whereas in the former, it appeared so only sometimes.

This change, however, which if duly attended to, ought to have introduced a very different practice, was totally neglected, for the faculty in this province, actuated by a chimerical empiricism, raised their characters on the downfall of the human species, reigning, like death, the lordly tyrants over an unpeopled land.

Now, here it seems very proper to consider what causes may have occasioned this prostration of reason, and this uncommon predilection for absurdity; a little reflection however, on the physical state of the country, and on the moral character of the people, who inhabit it, will be perceived to furnish them in abundance.

At Philadelphia, the rigors of the winter must produce in the human system a considerable degree of force, and though the summers are very hot, still can they not be deemed capable of counteracting that tension, and tone, of the muscular, and nervous systems, which are ever communicated by the bracing effects of cold; the people of this province also possess in a high degree, the common comforts of life, the labour of an individual being sufficient to procure them for a very numerous family;

mily ; besides, nearly one half of the inhabitants are Quakers, men who not only profess, but conform to a religion which forbids all excess, and from these two circumstances, we may fairly conclude, that their constitutions were not debilitated by the opposite extremes of want, or of luxury.

On such frames no kind of contagion, unless of the most concentrated nature, and never that which becomes epidemic in any country, could act with such energy, as might suppress in the economy, all powers of re-action ; nor is it very surprising, that a set of men totally unaccustomed to the disease, should mistake these symptoms for those of inflammation, and should proceed to treat their patients according to this false conception. In the more intense kind of yellow fever, the prostration of strength, and the symptoms of putrefcency were so very evident, that modern practitioners have been induced in most cases to inhibit venefaction, ~~but~~ ^{but} the practitioners of Philadelphia, relying entirely on the ancient mode of treatment, have applied the deadly lancet to a degree before unheard of.

Now, though they might have been led into the first mistake by appearances, seemingly indicating a strong inflammation, how they could continue in the error, can only be accounted for by supposing human reason, levelled with brutal instinct ; for when they perceived the first symptoms of putrefcency, their blunders became voluntary, and their perseverance in them murderous. That any person should

treat

treat, in such a manner, the most putrid of all maladies, must appear astonishing to every man of sense; but not content with this, they ventured also to administer mercury, and jalap, the former of which medicines breaks down the solids, and dissolves the fluids, consequently, though at present a very fashionable remedy, it should in an age of luxury at least, be confined to the cure of a certain complaint, for which some weak minds have deemed it a specific; but when, after such conduct, they talk of recoveries, ascribing them to the deluges of blood spilt, which in five days amounted to seventy-two ounces on a particular occasion, and to their having well fluxed their patients with calomel, the relations appear so perfectly miraculous, that the best of good Christians can scarcely give credit to them; such accounts indeed, could be borne merely from some blundering Irishman, who would allow the facts asserted, to be impossible, but at the same time, would maintain, that they were exceedingly true.

It was perfectly evident, that while the symptoms of reaction continued, none of the fatal appearances were observed, while as the former diminished the latter supervened, in consequence of which, the one sort should be cherished, as the benign effort of beneficent nature, whereas the other should ever be apprehended, as the fatal effects of a most formidable disease; but when any ailment appears with such a variation of circumstances, as the substitution of strong reaction for total prostration of strength, reading, and common talents, are by no means

means sufficient for the proper treatment of it, since this undertaking would require the energetic exertions of a philosophical mind, superior to all prejudices, and capable of deriving improvement from its very errors. Had men of this latter description been employed, they would have preserved the lives of thousands in that country, nor would their ruinous example have spread desolation through our ranks in the West Indies. I am sorry however to obserye, that it is the general mode of proceeding, to determine the nature of the disease according to the first symptoms, and without farther investigation, after which, the powerful influence of prejudice, acting in concert with the fascination of self-love, forbid the practitioners to change their opinion; contenting themselves therefore, with obviating such appearances, as threatened danger at the first view, they think themselfes no farther accountable for the event.

As the greater part of the troops among whom the yellow fever caused such dreadful havoc, were lately brought from Europe, it is probable, that the tone of their system might enable them also at the commencement, to shew strong symptoms of reaction, which a set of men unacquainted with the disorder, and impressed with strong prejudices in favour of the Philadelphian practice, might easily misconstrue into those of inflammation; but if the physicians were sent from home (and I never heard that those of the islands were engaged in the service) they must have been of course, very ignorant of the manner

manner, in which the disorder should be treated, as books would only tend to misguide them, their errors increasing in proportion to their reading.

The surgeons too, in the marching regiments, were generally in the same state, and though a very few of them might have had opportunities of making observations on the maladies of the torrid zone, still might the want of sound philosophical principles, joined to that of a perfect similitude in the symptoms of the two diseases, cause them to be mistaken in the nature of the less intense yellow fever, or if they perceived it, and offered their advice, it might possibly have been rejected by supercilious superiors.

Having now made my remarks on the two species of this disorder, and on the mode of treating it in ~~both~~ the islands, of which it was an endemic, and on the continent, into which it was imported, I shall venture to follow it to the country, where I write.

In 1791 the yellow fever of the West Indies was introduced into the county of Wexford, and before the commencement of summer, had gradually made its progress to that part of the country, in which my practice chiefly lay ; the symptoms were nearly the same, as in that of Philadelphia, with some addition however to the force of reaction, as might naturally have been expected from our more northerly situation, and with some variation of appearances in the different ranks of life, which may be accounted for by

by the difference in their mode of diet. In the first place, I observed that the poor were attacked, from the very beginning, with vomiting ; but as the pulse were full, and hard, nor were the other symptoms of reaction less powerful, I attributed this circumstance to their wretched method of living, their general food being potatoes, with the addition of either buttermilk or a salt herring ; now as their aliment was in the one case, indigestible, and in the other, conjoined putrescence with it, no person can wonder that a considerable irritation should take place in the stomach, while their bodies being indurated by hard labour, might offer very forcible resistance to contagion. The tendency to vomiting however was very much checked by the exhibition of emetics, and opiates, nor did I ever perceive it to continue beyond the third day, unless venesection had been unfortunately applied ; in such persons, as were enabled to afford themselves all the comforts of life, whether derived from their own property, or supplied by the liberality of others, a retching alone could be observed in the beginning, and this speedily yielded to the remedies, lately mentioned.

It may perhaps be useful to remark also, that whereas in the fever of Philadelphia, from the fifth, to the eighth day, was found to be the fatal period of such, as were carried off, in that of Ireland, the crisis in favour of such, as recovered, was formed within the same time, though for the most part it took place on the fifth. With respect to those who died, it would be impossible to reduce the moments

of their dissolution to any particular limitation, since they varied perpetually in proportion to the strength of their constitution, their former habits of living, and the treatment which they met; but on the subject of death, I speak almost entirely from the information of others. The physicians of this country treated this complaint generally according to the ancient method, but with still worse success, than even that of Philadelphia, for it was observed, that every person, who was blooded, as certainly died, whereas some of that city outlived it, and several wretches here, whose poverty excluded all medical assistance, recovered from the malady. Now the more fatal consequences, which attended the very same mode of treating the very same disease, in a more favourable climate, can be merely accounted for by the bad state of medicine through this kingdom in general, but more particularly in the country, and to the almost total impossibility of procuring Madeira, in consequence of which, if the vital powers were once depressed, it was found impracticable to raise them.

When I was called on, I could not hesitate a moment at determining the nature of the disorder, and though many persons had ventured, in compliance with former prejudices, to pronounce it not infectious, still did I declare it to proceed from the most highly concentrated contagion, which becomes epidemic, recommending to the clergymen of the different religious sects, to inhibit their flocks from attending

attending the wakes of the deceased *, and by this caution the progress of the fever, at least in that quarter was happily arrested ; I shall only add, that though I attended sixty persons, and upwards, two only of the number paid the debt of nature, each of whom had been blooded before I was called on, the one twice, and the other five times, the fatal effects of which evacuation could not be removed by the most strenuous exertions, the black vomit, with every deadly symptom speedily succeeding.

I am in the last place to offer the mode of treatment, which I pursued in the West Indies, and in this kingdom ; but here I must remark, that though the more, and less intense, species of yellow fever differ from each other, merely in the force of reaction (since if the latter is allowed to assume its proper form, it will be found to exhibit the same symptoms with the former,) yet do they require to be conducted in such a manner, as would seem to mark but a very slight degree of similarity. The indication of cure, which in my opinion, ought to have been established, is first, to overcome the spasm of the extreme vessels ; secondly, to evacuate acrimony, whether biliary, or putrid, correcting at the same time any tendency to either ; and lastly, to remove debility, which will ever be found most effectually to repress the progress of putrefaction.

I 2

Now,

* So in this kingdom the meetings of people at the house of the departed person are denominated, because they continue to watch the whole night.

Now, here it may be necessary for me to remark, that though this is the natural, obvious, and proper mode of treating this malady in general, more especially, when the symptoms of re-action are powerful, yet will the practitioner observe in several cases of the more intense yellow fever, the appearances to vary so much, that no method of treatment can possibly be established, which he will not be frequently obliged to abandon. The strength of the original stamina, and the accidental circumstances, under which the patient was exposed to the occasional cause of the disease; for instance, whether he was drunk, or sober, whether he was alternately heated, and chilled, whether he was braced by continence, or relaxed by venery, will have great influence in changing the symptoms, and require a philosophical mind, capable of altering the mode of treatment, according to every considerable alteration of the appearances.

The first part of the indication, or the solution of the spasm, which subsists in the extreme vessels or pores, will be most effectually answered by the exhibition of emetics, particularly of the antimonial kind, as being best calculated to produce dia-phoresis; and the form in which I administered them is as follows:

R.

Tartar. Emetic. gr. vi.

Aq. Menth. Piper. ʒii.

Misceantur, et fiat haustus.—N. B. Six grains of tartar emetic are the quantity now given as a dose, in the country parts of Ireland, but it must be varied, according to the saturation of the antimony with the acid.

If

If the straining should prove violent, the vomit may be worked off with a strong infusion of camomile flowers in boiling water, but suffered to stand until it becomes perfectly cold ; by this means the determination to the surface will be promoted, and supported, while the natural tendency of the emetic to produce stool will be increased by the bitters, and thereby, may the first part of the second indication be complied with.

If this should not happen, aloetic purgatives, as bearing the nearest affinity to bile, should, in the next place, be administered, but rendered more likely to agree with the stomach, by the union of such medicines, as are found to be acceptable to that bowel ; and I have ever perceived the most happy effects from the subjoined prescription :

R.

Tinctur. sacr.

Tinctur. stomachic. a. a. 3ii.

Misceantur, et sumatur cochleare, horâ quâ vis usqueeo, quo solvatur alvus.

I have been obliged to neglect the completion of the first alteration, which was pointed out, on the supposition that the emetic, and bitter infusion had failed to produce stool, a circumstance which will be found very rarely to occur ; having, therefore, premised the means of cleansing the primæ viæ, an object of the first importance in all putrid ailments, I shall return immediately to my indication.

Now,

Now, the solution of spasm can be obtained, merely, by a plentiful determination to the surface, and of course, powerful diaphoretics are indicated in addition to the emetic ; to this purpose opium is very well adapted, and tends also to allay the irritation of the stomach, though for the reasons, already assigned, it ought never to be introduced in a crude form ; and, idiosyncrasies excepted, nothing can answer better than the formula annexed :

R.

Julap. Moschat. ʒii.

Spt. Cornu Cervi gutt. xxxv.

Tinctur. Thebaic. gutt. xxx.

Misceantur, et fiat haustus.

On this head, I must observe, that musk has a strong tendency to quiet irritation, and also to prevent the disagreeable effects of laudanum, and of course is the best vehicle in which it can be conveyed, while the constant stimulus of the hartshorn supports a continued determination to the surface, whereas the action of opium is analogous to that of wine, in the first instance it excites, and afterwards stupifies ; but if the musk should be found offensive to particular persons, the camphorated julap may be substituted for it, the more delicate odour of which is less apt to prove disagreeable ; and with this medicine, rendered more active by repeated draughts of Madeira, if the symptoms of re-action are strong, we may conclude the treatment of the patient for the first day. As the laudanum is observed to produce a torpor of the intestines, the purgative

purgative medicine should, on the next day, be recurred to, until the primæ viæ were again cleansed, and this effected, our attention may be directed to the latter part of the indication, or the correction of putrefGENCY, which if the vital forces are not impaired, may be effected by the saline draughts, given in effervescence, and by other antiseptics, with the constant use of wine.

I shall now proceed to the last part of the indication, or the removal of debility, which most powerfully tends to the correction of putrefaction, and which effected, the latter cannot exist; this purpose is best answered by the tonic power of bark, which acquires double efficacy by the addition of spice, and the salutary stimulus of Madeira, a wine which possesses such very rare virtues, more particularly this of acting as a gentle laxative, that without it men could not exist in the tropical regions.

Here it may be necessary to caution the young practitioner against the rapid progress of the fatal symptoms, and the insidious tendency of the disease, which in general are so remarkable, that the most unremitting attention, and the most powerful exertions are perpetually required; nor should he content himself with administering any particular quantity of medicine, or of wine; but, if the stomach of his patient will bear them, should push both on, until he finds the pulse rise, and all the other symptoms of re-action increase. Besides, though in the indication antiseptics precede tonics, yet on examination

examination will they be found to differ rather in name, than in reality, he should therefore lose no time in exhibiting the bark, which, after cleansing the primæ viæ, ought ever to be introduced on the second day at the latest, and earlier if the vital forces were enfeebled; or, from the very first moment if they were totally prostrated.

Having made this observation, it may seem proper, that I should offer to the reader, some particular forms of administering this medicine, in such a manner as I deem most efficacious, and accordingly I shall submit the two following to his consideration.

R.

Cort. Peruv. pulv.

Confect. Cardiac. ā. ā. ʒii.

Syr. Zinzib. q. s.

Misceantur, et sumantur cochlearia duo theana horâ quâ vis, si sufferre valeat ventriculus, si non, exhibeatur dimidium.

If the stomach should reject this preparation, I shall propose another; but I must observe, that if the first can be borne, it should ever be preferred.

R.

Decoct. Cort. Peruv. Lii.

Vitriol. Elixir. acid. ʒii.

Misceantur, et sumantur cochlearia duo ~~theana~~ horâ quâ vis.

Now, whichever of these preparations is administered, it must be recollect^ded that it should be washed down with as much Madeira, as the patient can

can bear: In northerly climates, or even in the more southerly latitudes, idiosyncrasies excepted, he will generally retain the first mentioned preparation, provided the indication was pursued, and the force of re-action is considerable, wherefore the practitioner need not hesitate at administering it. By this he will gain an additional advantage, for the acid elixir of vitriol, a very fine tonic, and antiseptic medicine, may, to the amount of thirty drops, be mixed with every draught of wine, that is given to the patient; but in the West Indies the reverse may take place, and the stomach may appear unable to endure so powerful a remedy, the practitioner should then have recourse to the second. But as this also may be rejected, when the vomiting has once commenced, and he may thus be reduced to a mere choice of difficulties, I shall offer one rule which perhaps will prove useful in the regulation of his conduct. If vomiting should take place at the commencement of the disease, without a considerable prostration of strength, he may be convinced, that it proceeds from irritation, and may pursue the mode, already proposed, according to the indication, beginning with an emetic. But, if the method advised, does not in some measure relieve this affection, on the second day, he may then be assured, that debility has an equal part in the production of this effect, in consequence of which he should instantly administer Madeira with spice; when the stomach can bear this, he should exhibit the decoction, and next the electuary; when this has lain well on the stomach for twenty four hours,

during which time acrimony has been partially evacuated by clysters, he should then recur to the indication of cure, administering however at intervals, with the medicines pointed out by it, the former remedy, with Madeira in large quantities. If the vomiting should be found unconnected with any strong symptoms of reaction, he must in this case consider it rather, as a symptom of weakness, than irritation, and therefore the physician, neglecting entirely the first part of the indication, and a portion of the second, should apply himself totally to the correction of putrefcency, and the restitution of the vital powers; with this view, he should first try the electuary, washed down with Madeira, as it may happen from the mode of diet, which the patient lately used, that there may be found no more bilious, or putrid acrimony in the stomach, than can be perceived in other parts of the economy. If this remedy should check, or remove the vomiting, he should then ~~invert the entire~~, invert the entire indication, administering other antiseptics with it for the purpose of correcting bilious, or putrid acrimony; afterwards purgatives with the intention of evacuating it, concluding the process with emetics, and diaphoretics, designed to remove the spasm of the extreme vessels, but continuing the bark, and wine. In treating the more intense yellow fever, it will require some nicety to apply these directions, but in the less intense kind of it, or that, in which strong symptoms of reaction take place, and which carried off such numbers of our troops in the West Indies, even ignorance itself can scarcely mistake them:

but

but though method obliged me to proceed with regularity, through the several parts of the indication, I must repeat that it should be pursued without deviation, merely in that species of the disease, which is designated by symptoms of strong reaction; for I myself have seen some instances of the more intense yellow fever, in which the prostration of strength was so great, that I could not cease to apprehend an immediate dissolution, and the vomiting so incessant, from even the very first moment of the attack, that the stomach could retain no kind of medicine. In consequence of these symptoms I have confined myself, at first, to the administration of Madeira, rendered palatable by spice, with the addition of the strong distilled waters, whenever I was informed, that they were grateful to the stomach; and though they were all very frequently rejected, by perseverance in the repetition of them, I have sometimes known the dangerous symptoms to be moderated.

Physicians in the islands frequently complain of being called on too late, but this can never happen to such persons, as are instructed with the care of our soldiery, since no sooner is any of them taken ill, than he is conveyed to the hospital.

Having now nearly finished the treatment of this disorder, it is fit that I should advert to one of its most disagreeable symptoms, I mean the pain in the head, which I have hitherto abstained from taking notice of, as the cause of it has not been yet ascer-

tained ; it has ever been considered as a symptom of reaction, but if this were the case, it would diminish with the decrease of the latter, the reverse of which is true, for we often find it continue through the whole course of the fever, and sometimes long after the malady has subsided ; I therefore conceive it to be the symptoma causæ morbi, or of the acrimony from contagion, generally irritating the sensuum and the stomach, though the latter is not so speedily affected as the former. A blister on the head, but more particularly on the occiput, as the origin of the nerves, is the remedy here indicated, nor need the young practitioner be intimidated by the dreadful accounts, given by the ancient writers, with respect to the tendency of it to promote putrefaction, as later experience has proved them to be the effects of prejudice, evincing the remedy to be both salutary and safe ; it may be proper to remark, that in general, the best time for the application of it is early on the second day, as the stimulus thereof excites the vital forces, and counteracts the narcotic operation of the laudanum, but there is scarcely any period, at which it may not be used with some prospect of advantage.

I shall now add two observations, one relating to the treatment, which the soldiers should receive in their state of sickness, and the other to the manner, in which they ought to be conducted on their recovery ; first, all medicines should be administered in the most simple form which may promise to answer.

surer the indication of cure, for as the vomiting is one of the most dangerous symptoms, and as every substance, which enters into the composition of any remedy, may by possibility, prove disagreeable to some particular stomachs, it is perfectly evident that none should be introduced, but such as are absolutely requisite, and as specimens of this manner, I have offered a few prescriptions, the chief recommendation of which is their freedom from unnecessary combination.

Secondly, since in most of the islands there are very great eminences, it would prove highly advantageous to erect, on the summit of them, receptacles for the convalescent, as, in such a situation, they would breathe a temperate air, for on the top of the blue mountains in Jamaica, even ice has been found; I am well convinced of the difficulties, which must attend such an undertaking, but if they are not insurmountable, the good consequences of success in it would be so very great, that they must fully justify our commanders for hazarding the experiment. The learned reader will perceive, that in treating this subject, I have followed the Socratic mode of arguing, with this only difference, that instead of deducing my premises from the answers of my antagonists, I have taken them from their writings, which, as being more studied, must of course be more accurate; if then the conclusions are fairly drawn, no person can possibly withhold his assent, and to shew that they are, I shall briefly reduce

reduce the argument to the form of a syllogism, observing, that both bleeding, and mercury tend to debilitate. In every putrid disease, whatever debilitates becomes injurious, and in proportion to the increase of putrescency, does it become more, or most injurious; but the yellow fever is the most putrid of all disorders; therefore in the yellow fever, whatever debilitates becomes most injurious.

F I N I S.

